and cataplasms to the abdomen, with demulcent diaphoretic drinks, the avoidance of purgatives and stimulants, with complete quiet of body and mind, to be the most successful mode of subduing fever. Sometimes, to be sure, symptoms arise, requiring the use of opium and other remedies. Sometimes calomel appears to be serviceable, and it would no doubt be so if the disease depended upon ulceration of the intestines. But my object is not to enter into detail respecting the treatment of fever, but to awaken inquiry, by calling attention to the fact, that ulceration of the intestines is a very frequent occurrence in fever, and may perhaps often be the cause of the disease.

Hartford, Conn. January 1, 1836.

ART. IX. *Case of Umbilical Hernia. By* Dr. P. FAHNESTOCK, *of Chambersburg, Pa.*

The subject of the following operation was a female child, aged seven years and six months—of stature so diminutive as to resemble a child of three or four years. The body and extremities were out of relative proportion; the magnitude of the head was equal to that of an adult; the superior extremities were of natural size, but the inferior members were small and delicate; the chest projected in a remarkable manner, whilst the neck was so very short, that the chin and the superior extremity of the sternum were in close approximation. The parents of the child have recently emigrated from Germany.

Some time in the last month the child was presented to me, for the purpose of having Hood & Chase's patent truss applied, but the application of several instruments of different construction soon rendered it manifest that the retention of the protruded parts was utterly unfeasible, more especially as the ring through which the hernia emerged presented a diameter apparently of three inches, whilst the enormous tumour extended to the knees. For days in succession the parents of the child importuned me to do something with the view of rescuing the suffering child from impending death. In reply to their urgent solicitations, I candidly stated the difficulties that, in the event of an operation, stood in the way of a successful issue.

To this end, an examination of the case, on the 23d ult., was instituted, in consultation with Drs. Bain, Elder, and Senseny, jr. The hernial tumour presented the following dimensions:—At the neck, it

was 12 inches in circumference; about 6 inches in advance of this part it was 15 inches, whilst it measured 17 inches longitudinally. These measurements were taken in the recumbent posture. When erect, and favoured by the relaxation of the abdominal parietes consequent on the constant weight and drag of the hernial mass, it depended to the child's knees. On the lower posterior part of the tumour, *two extensive ulcers* were found in the integument, one of which had nearly penetrated through its parietes. Add to this the incessant suffering inseparable from such a condition, the constant exposure to danger from blows and falls, as well as the future incapacity of following any employment requiring bodily exertion, and the reader will be better enabled to form a proper estimate of the case. The protrusion, evidently consisting both of intestine and omentum, appeared completely reducible. Under views of this character, the consulting physicians coincided with me in the propriety of an operation.

"The performance of the operation for strangulated hernia," observes Sir Astly Cooper, "does not prevent the future descent of the intestine or omentum, but perhaps renders the patient more liable to its recurrence, as the mouth of the sac is by the operation considerably enlarged." With the view of obviating this subsequent protrusion, he recommends the employment of a truss. The removal of the hernial sack by excision or ligature, or its return into the abdomen, has also been proposed as a means of affecting a radical cure, but the experience of Sir Astly teaches us that neither of these modes will prevent the re-formation of a hernia. This, indeed, is evident, upon a moment's reflection; for, as the aperture remains equally large, the liability to another protrusion is certainly not diminished. "The great danger of this operation," says he, "is in the inflammation, which is likely to be induced by the action of the ligature upon the peritoneum, and in this inflammation extending to the cavity of the abdomen."

Hence it would appear that to effect a radical cure is still a desideratum among modern surgical writers. Believing, however, that, in the case before us, this end might be attained, by availing ourselves of one of the best established principles in practical surgery—a modification, in truth, of the ancient mode of treatment, revived of late years by Desault—I suggested the expediency of applying a flat ligature to the hernial bag, after its contents had been carefully returned into the abdomen, with the view of *merely exciting the adhesive inflammation;* whilst another ligature, in advance of the former, should be applied for the purpose of strangulating the part so completely as to interrupt the circulation. The remarkable success attending well

directed pressure in the case of hernia, has already been abundantly illustrated in the use of Hood & Chase's truss. Celsus, and many of his predecessors, according to Professor Heister,* pursued a mode of operating, in some respects, similar. After reducing the protruded viscera, a needle, armed with a double ligature, was passed through the neck of the tumour, close to the navel, and then firmly tied on both sides. Others, continues Heister, recommend an incision into the sac, with the view of ascertaining the complete reduction of the protrusion. The application of a ligature to the basis of the exomphalos, in the hands of Desault, effected a radical cure in upwards of fifty cases; but as this operation proved unsuccessful in a girl aged nine years, he thinks the probability of the cure diminishes with the age of the patient. In the present case, therefore, I endeavoured so to modify the operation as to render subservient to a radical cure, that pathological property of adhesion between the tissues, which is induced by a certain grade of inflammatory action—a phenomenon more especially pertaining to the serous membranes. As evil consequences, reasoning *a priori*, might, of necessity, be attributed to this operation, it may not be improper to assign the reasons which impelled me to its adoption. When the ligature is applied directly over the peritonial sac, Sir Astly Cooper apprehends danger of "inflammation extending to the cavity of the abdomen;" but the objection is far from obtaining with the same force, when applied over the dermoid teguments. In the physiological condition of the serous tissue, the extension of phlogosis is, indeed, very rapid; but experience has proven that the danger of opening serous cavities in dropsies and hernia, is much less than in the normal state, because the irritability of the tissue has become greatly obtunded; this high extended and retractile membrane, in fact, undergoes a change in its interstitial arrangement; it not only increases in extent, but the tissue becomes thickened, and looses its transparencies—phenomena, doubtless, resulting from hyper nutrition.

The operation was performed in the following manner:—The patient being placed on her back, the contents of the hernia were returned into the abdomen, and the sac raised and twisted with the view of insuring more fully the reduction of the intestines and omentum. A flat buckskin ligature, three-fourths of an inch wide, was now applied as near the abdomen as possible; not so firmly as to strangulate the parts, but sufficiently so to retain the viscera, and to excite the adhesive inflammation. A strong silk ligature was next

* Chirurgie, p. 710. Nurnberg, 1763.

applied with sufficient firmness to interrupt all circulation, about an inch distant from the former. The application of the latter ligature did not excite much pain, as the sensibility of the part had been blunted by the compression of the buckskin ligature. The patient proved very restless the ensuing night, making frequent demands for drink.

24th, morning.—Abdomen much distended and tympanitic; pulse 180; no evacuation from the bowels since the operation;—administered calomel grs. x. 12 o'clock, M. calomel has procured no stool; pulv. jalap, grs. x. Evening, bowels still unmoved—ordered enema, which induced several copious discharges.

25th. Much improved; pulse less frequent; thirst diminished; abdomen soft and flaccid: hernial bag black and offensive, removed with the scalpel. It was now discovered that, as the omentum had contracted an extensive adhesion in the lower portion of the sack, it was also included in the ligature; this gangrenous omentum was likewise removed close to the ligature.

26th. Had a good night; took nourishment, as milk; appeared inclined to playfulness during the day; some inflammation and swelling manifested around the ligature.

27th. Dressing the wound this morning, pressure was made on the part, which gave exit to a considerable quantity of pus. Milk diet continued—no medicine.

28th. Same condition; pulse 89.

29th. Enjoyed a good night's rest. Healthy purulent secretion from the umbilicus; had two moderate alvine evacuations; drinks milk freely—pulse natural. Evening—Pulse 120; had three stools during the day.

30th. Very favourable. This evening the lint used in dressing the wound was saturated with the water of kreosote. Bowels natural.

Dec. 1. About one half of the substance included in the ligature having escaped from it, a triangular cavity is formed; the viscera of the abdomen are not visible, but the bottom of the wound presents healthy granulations. Evening—Both ligatures have come away; the wound presents a healthy aspect; pulse and bowels natural—continue kreosote, and milk diet.

2nd. Disturbed sleep. Drank little milk, in consequence of the attempt causing what the mother described as a "choaking." Had one evacuation resembling undigested milk. Learned this morning that the mother had imprudently taken the child, for several preceding nights, from a warm apartment to a cold bed-chamber. It is this evening labouring under a severe catarrhal fever. Every attempt at deglutition causes a violent spasmodic action of the glottis.

3d. Died this morning, at 3 o'clock. Several convulsive paroxysms preceded death.

Autopsy, thirty hours after death, in presence of Drs. Bane, Elder, and Senseny, jr. Two incisions were made, commencing at the scrobiculus cordis, and terminating at the spine of each ilium, with the view of preserving the parts concerned in the exomphalos. The ring was perfectly closed by adhesion and granulation, which sprung from the tendinous margin of the hernial ring; the colon adhered to the inner surface of the granulations; not a trace of inflammation could be detected in the omentum, intestines, or peritoneum; the stomach, spleen, liver, and gall-bladder, presented a natural aspect; the omental vessels, divided by the ligature, were closed by adhesion.

Remarks.—From a review of the foregoing case in all its details—the pathological phenomena observed during life, and the appearances revealed after death—it is apparent that the patient was carried off by a malady, independent of the hernial operation. The manifestations of morbid action, subsequently to the operation, were expressed in such decided language, than an analysis of the principal phenomena is rendered easy. The absence of abdominal tenderness, and the spastic condition of the abdominal muscles, excited by pressure, afforded an unerring indication that peritonitis did not exist, and the post mortem examination demonstrated the correctness of this assumption. The fatal issue of the case, doubtless, is to be attributed to the child's imprudent exposure; the extensive morbid implication of the respiratory organs strongly corroborates this opinion. The strangulation of the omentum by the ligature, affords no evidence that death was hastened by this cause, for the abdominal organs exhibited no adequate lesions; moreover, Sir A. Cooper, in operating for strangulated hernia, recommends the removal of omentum by means of the knife when a very large portion protrudes; whilst the older surgeons, with the view to occasion a slough, followed the now obsolete practice of applying a ligature.

Upon the whole, however, were I called upon to operate in a similar case, I would adopt the method referred to by Heister as sometimes pursued by the ancients. I would lay open the hernial sac before the application of the ligature; inasmuch as the sense of touch, however acute, cannot determine *absolutely* the return of all intestinal protrusion. This mode of operation was successfully practised in a case under the care of our celebrated countryman, Dr. Wistar.

Chambersburg, Pa., Dec. 15th, 1835.

[* Were not these convulsions tetanic?—Ed.]